

We claim:

1. A cosmetic or pharmaceutical composition comprising

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A) at least one water-soluble or water-dispersible copolymer obtainable by free-radical copolymerization of

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a) 5 to 90% by weight, based on the total weight of components a) to d), of acrylamide and/or methacrylamide,

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b) 0 to 85% by weight, based on the total weight of components a) to d), of at least one α,β -ethylenically unsaturated amide-containing compound of the formula I

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where

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R^1 is a group of the formula $\text{CH}_2=\text{CR}^4-$ where $\text{R}^4 = \text{H}$ or $\text{C}_1\text{-C}_4\text{-alkyl}$, and R^2 and R^3 , independently of one another, are each H , alkyl, cycloalkyl, heterocycloalkyl, aryl or hetaryl, with the proviso that one of the radicals R^2 and R^3 is different from H , or R^2 and R^3 together with the nitrogen atom to which they are bonded are a five- to eight-membered heterocycle,

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or R^2 is a group of the formula $\text{CH}_2=\text{CR}^4-$ and R^1 and R^3 , independently of one another, are each H , alkyl, cycloalkyl, heterocycloalkyl, aryl or hetaryl, or R^1 and R^3 together with the amide group to which they are bonded are a lactam with 5 to 8 ring atoms,

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c) 0 to 40% by weight, based on the total weight of components a) to d), of at least one unsaturated water-soluble compound which is different from components a) and b) and copolymerizable therewith,

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where the proportion by weight of the sum of components b) and c) is at least 5% by weight,

optionally in the presence of up to 25% by weight, based on the total weight of components a) to d), of at least one water-soluble component d), which is chosen from

5 d1) polyether-containing compounds,
 d2) polymers which have at least 50% by weight repeat units derived from vinyl alcohol,

10 d3) starch and starch derivatives,
 and mixtures thereof, and

B) at least one cosmetically acceptable carrier.

15 2. A composition as claimed in claim 1, where component b) comprises at least one compound chosen from N-vinyllactams, N-vinylamides of saturated monocarboxylic acids, N-alkyl- and N,N-dialkylamides of α,β -ethylenically unsaturated
20 monocarboxylic acids and mixtures thereof.

25 3. A composition as claimed in either of the preceding claims, where component c) comprises at least one compound chosen from esters of α,β -ethylenically unsaturated mono- and dicarboxylic acids with aminoalcohols, their N-alkyl- and N,N-dialkyl derivatives; esters of vinyl alcohol with monocarboxylic acids; vinyl- and allyl-substituted heteroaromatic compounds; amides of α,β -ethylenically unsaturated mono- and dicarboxylic acids with diamines which
30 have a tertiary and a primary or secondary amino group; polyether acrylates and mixtures thereof.

35 4. A composition as claimed in any of the preceding claims, where component B) is chosen from

35 i) water,
 ii) water-miscible organic solvents, preferably C₁-C₄-alkanols,
40 iii) oils, fats, waxes,
 iv) esters of C₆-C₃₀-monocarboxylic acids with mono-, di- or trihydric alcohols different from iii),
45 v) saturated acyclic and cyclic hydrocarbons,

vi) fatty acids,

vii) fatty alcohols

5 and mixtures thereof.

5. A composition as claimed in any of the preceding claims,
further comprising at least one constituent different from
copolymer A which is chosen from cosmetically active
10 ingredients, emulsifiers, surfactants, preservatives, perfume
oils, thickeners, hair polymers, hair and skin conditioners,
graft polymers, water-soluble or dispersible
silicone-containing polymers, light protection agents,
bleaching agents, gel formers, care agents, colorants,
15 tinting agents, tanning agents, dyes, pigments,
consistency-imparting agents, humectants, refatting agents,
collagen, protein hydrolysates, lipids, antioxidants,
antifoams, antistats, emollients and softeners.

20 6. A composition as claimed in any of the preceding claims in
the form of a gel, foam, spray, an ointment, cream, emulsion,
suspension, lotion, milk or paste.

7. A copolymer A) as defined in any of claims 1 to 3.

25 8. A copolymer A) as claimed in claim 7 obtainable by
free-radical copolymerization of

30 a) 10 to 45% by weight, based on the total weight of
components a) to d), of methacrylamide,

b) 60 to 90% by weight, based on the total weight of
components a) to d), of vinylpyrrolidone and/or
vinylcaprolactam,

35 c) 0 to 25% by weight, based on the total weight of
components a) to d), of at least one unsaturated
water-soluble compound different from a) and b) and
copolymers therewith,

40 optionally in the presence of up to 20% by weight, based on
the total weight of components a) to d), of polymers d2)
and/or starch and starch derivatives d3).

45 9. A copolymer A) as claimed in claim 8, obtainable by
free-radical polymerization of

- a) 20 to 40% by weight of methacrylamide,
- b) 40 to 70% by weight of vinylpyrrolidone,

5 in the presence of from 1 to 20% by weight of polymers d2) and/or starch and starch derivatives d3).

10 10. A copolymer A) as claimed in claim 8, obtainable by free-radical polymerization of

- a) 30 to 40% by weight of methacrylamide,
- b) 20 to 60% by weight of vinylpyrrolidone and 1 to 20% by weight of vinylcaprolactam.

15 11. A copolymer A) as claimed in claim 7, obtainable by free-radical polymerization of

- a) 20 to 40% by weight of methacrylamide,
- b) 40 to 70% by weight of vinylpyrrolidone and
- c) 1 to 20% by weight of at least one water-soluble compound different from a) and b) and copolymerizable therewith.

20 25 12. A copolymer A) as claimed in claim 7, obtainable by free-radical copolymerization of

- a) 5 to 50% by weight, based on the total weight of components a) to d), of methacrylamide,
- b) 40 to 85% by weight, based on the total weight of components a) to d), of at least one compound chosen from vinylpyrrolidone, vinylcaprolactam, N,N-dimethylacrylamide and mixtures thereof,
- c) 0.2 to 20% by weight, based on the total weight of components a) to d), of at least one unsaturated water-soluble compound different from a) and b) and copolymerizable therewith which is chosen from vinylimidazole and derivatives thereof, polyether acrylates and mixtures thereof,

30 35 40 45 optionally in the presence of up to 10% by weight, based on the total weight of components a) to d), of polymers d2) which are derived from vinyl alcohol, and optionally in the

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presence of up to 1% by weight, based on the total weight of components a) to d), of at least one crosslinker.

13. A copolymer A as claimed in claim 12, obtainable by
5 free-radical polymerization of

a) 7 to 45% by weight of methacrylamide,

10 b) 50 to 80% by weight of at least one compound chosen from vinylpyrrolidone, vinylcaprolactam,
N,N-dimethylacrylamide and mixtures thereof,

15 c) 0.3 to 10% by weight of at least one compound chosen from vinylimidazole and derivatives thereof, polyether acrylates and mixtures thereof,

in the presence of from 0.1 to 10% by weight of polymers d2)
which are derived from vinyl alcohol.

20 14. A copolymer A) as claimed in claim 12, obtainable by
free-radical polymerization of

a) 10 to 45% by weight of methacrylamide,

25 b) 50 to 80% by weight of vinylpyrrolidone and
vinylcaprolactam and

c) 0.3 to 10% by weight of vinylimidazole and/or a derivative thereof.

30 15. A copolymer A) as claimed in claim 12, obtainable by
free-radical polymerization of

a) 10 to 45% by weight of methacrylamide,

35 b) 50 to 80% by weight of vinylpyrrolidone and

c) 0.5 to 5% by weight of vinylimidazole.

40 16. A process for the preparation of a copolymer A, as defined in
any of claims 1 to 3 and 7 to 14, by free-radical
polymerization of the monomers a) with at least one further
monomer chosen from the monomers b) and c), optionally in the
presence of up to 25% by weight, based on the total weight of
45 components a) to b), of a water-soluble component d), wherein
the polymerization is carried out in an aqueous solvent.

17. The process as claimed in claim 16, wherein the polymerization is carried out at a pH in the range from 6 to 8.
- 5 18. The process as claimed in claim 17, wherein the polymerization is carried out at a pH in the range from 6.4 to 7.4.
- 10 19. The use of a copolymer A) as defined in any of claims 1 to 3 and 7 to 14 in skin-cleansing compositions, compositions for the care and protection of the skin, nail care compositions, preparations for decorative cosmetics and hair-treatment compositions.
- 15 20. The use as claimed in claim 19 in hair-treatment compositions as setting agents and/or as conditioners.
- 20 21. The use as claimed in claim 20, where the composition is in the form of a hair gel, shampoo, setting foam, hair tonic, hairspray or hair foam.
- 25 22. The use of a copolymer A) as defined in any of claims 1 to 3 and 7 to 14, as an auxiliary in pharmacy, preferably as or in (a) coating(s) for solid medicaments and as or in (a) coating(s) for the textile, paper, printing and leather industry.
- 30 23. The use of a water-soluble copolymer A), as defined in any of claims 1 to 3 and 7 to 14, as graft base, polymer emulsifier or protective colloid.